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Process For The Automatic Control Of The Thickness Of Extruded Film

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Claims

1. Process for the automatic control of the thickness of extruded films that
15 comprises of the following features:
 - Measurement of the thickness profile of the film just extruded (8) with the
help of a thickness-measuring probe (12) that is moved along the surface of
the film substantially perpendicular (x) to the conveying direction (z) of the
extruded film (8). The thickness-measuring probe records for each measuring
20 cycle (MZ) a thickness profile (P) of the film (8) at least across parts of the
expansion of the film (8) perpendicular (x) to its conveying direction (z),
 - Transmitting the measured values to a control unit (14, 15, 17),
 - Storage of the measured values underlying the thickness profiles in a storage
unit (14),
 - 25 - Provision of statistical values of the film thickness (5) using a computer (14),
whereby the computer (14) takes into account measured values or information
derived therefrom using a definite number (N) of measuring cycles (MZ) and,
if necessary, provides measured values from recent and older measuring
cycles with different weighting factors,

- Determination of the deviations in the statistical values of the film thickness (5) from a target value,
- Generating control commands to a device for controlling the film thickness (5) **characterized in that,**

5 while providing the statistical values in relation to the older measured values, the latest measured value(s) during a predetermined time-frame at the start of the extrusion process are more heavily weighted by the computer (14) than those measured during the normal operation.

10 2. Process pursuant to claim 1

characterized in that

the computer (14) determines the statistical values by taking into account measured values or information derived therefrom using a smaller number (N) of measuring cycles (MZ) during a predetermined time-frame at the start of the
15 extrusion process than the number of measuring cycles used during the normal operation.

3. Process pursuant to one of the afore-mentioned claims

characterized in that

20 the computer (14) determines the statistical values during a predetermined time-frame at the start of the extrusion process wherein at least one older measured value is provided with a smaller weighting factor than the weighing factor used during normal operation.

25 4. Process pursuant to one of the afore-mentioned claims

characterized in that

the computer (14) determines the statistical values during a predetermined time-frame at the start of the extrusion process wherein at least one recent measured value is provided with a larger weighting factor than the weighting factor used
30 during normal operation.

5. Process pursuant to one of the claims 2 to 4

characterized in that

- the number (N) of measuring cycles (MZ) and/or
- the weighting factors

5 after the start of the extrusion process are made to approximate in steps the number (N) of measuring cycles (MZ) used in the normal operation and/or the weighting factors used in the normal operation.

6. Device for the automatic control of the thickness of the extruded film (8)
10 having the following features:

- a thickness-measuring probe (12) for measuring the thickness profile of the film just extruded (8) that is moved along the surface of the film (8) substantially perpendicular (x) to the conveying direction (z) of the extruded film (8). The thickness measuring probe (12) records for each measuring cycle
15 (MZ) a thickness profile (P) of the film (8) at least across parts of the expansion of the film (8) perpendicular (x) to its conveying direction (z),
- Transmitting the measured values to a control unit (14, 15, 17),
- A storage unit (14) for recording the measured values and the information derived therefrom,
- 20 - A computer (14) for providing statistical values of the film thickness (5) taking into account measured values or information derived therefrom using a definite number (N) of measuring cycles (MZ) and using which (14), if necessary, measured values from recent and older measuring cycles can be provided with different weighting factors,
- 25 - whereby even the deviations in the statistical values of the film thickness (5) from a target value can be determined using the computer (14),

- A device (17) for generating control commands to a device for controlling the film thickness (5)

characterized in that

while providing the statistical values in relation to the older measured values the latest
5 measured value(s) from a predetermined time-frame at the start of the extrusion are heavily weighted using the computer (14) than during the normal operation.